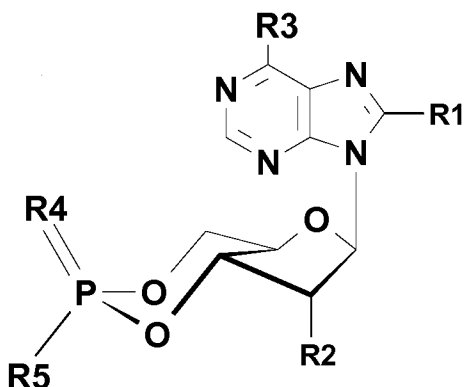


### Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

### Listing of Claims:

Claim 1 (Currently amended): Compound having the structural formula (I)



wherein:

**R1** can be independently azido, alkyl, aryl, amido-alkyl, amido-aryl, O-alkyl, O-aryl, SH, 2-hydroxyethylthio, 2-aminoethylthio, S-aryl, NH-aryl, N-bisaryl or cycloalkylamino;

**R2** can be independently Cl, Br, I, azido, O-alkyl, S-alkyl, NH-alkyl, N-bisalkyl, alkyl-carbamoyl or cycloalkylamino;

**R3** can be independently azido, amido-alkyl, amido-aryl, amino, NH-alkyl, NH-aryl, N-bisalkyl, N-bisaryl, NH-alkyl-carbamoyl or cycloalkylamino;

and wherein

**R4** is O(H) or S(H); and

**R5** is O(H), S(H), amino, H, alkyl, O-alkyl, O-aryl, S-alkyl, S-aryl, NH-alkyl, NH-aryl, N-bisalkyl[,.] or N-bisaryl; or

**R4** is O(H), S(H), amino, H, alkyl, O-alkyl, O-aryl, S-alkyl, S-aryl, NH-alkyl, NH-aryl, N-bisalkyl[,.] or N-bisaryl; and

**R5** is O(H) or S(H);

and pharmaceutically acceptable salts and/or hydrates ~~and/or solvates~~ thereof, with the proviso that the following named compounds are excluded:

2'-deoxyadenosine-3',5'-cyclic monophosphate;  
N<sup>6</sup>-monobutryl-2'-deoxyadenosine-3',5'-cyclic monophosphate;  
2'-deoxyadenosine-3',5'-cyclic monophosphorothioate;;  
2'-deoxyadenosine-3',5'-cyclic monophosphoroanilidate;  
2'-deoxyadenosine-3',5'-cyclic monophosphate methyl triester;  
2'-deoxyadenosine-3',5'-cyclic monophosphate ethyl triester;  
2'-O-methyladenosine-3',5'-cyclic monophosphate; ;  
2'-O-ethyladenosine-3',5'-cyclic monophosphate;  
2'-O-n-propyladenosine-3',5'-cyclic monophosphate;  
2'-O-n-butyladenosine-3',5'-cyclic monophosphate;  
2'-O-iso-butyladenosine-3',5'-cyclic monophosphate;  
2'-O-methyladenosine-3',5'-cyclic monophosphate methyl triester; and  
2'-O-methyladenosine-3',5'-cyclic monophosphate phenyl triester.

Claim 2 (Currently amended): The compound of claim 1, wherein

**R1** is azido, O-alkyl, O-aryl, S-alkyl, S-aryl, NH-alkyl[[.]] or NH-aryl ~~or Se-aryl~~.

Claim 3 (canceled):

Claim 4 (Previously presented): The compound of claim 1, wherein

**R1** is azido, 2-chlorophenylthio, 3-chlorophenylthio, 4-chlorophenylthio, 2-bromophenylthio, 3-bromophenylthio, 4-bromophenylthio, 2-fluorophenylthio, 3-fluorophenylthio, 4-fluorophenylthio, 4-methylcumariny, naphtyl-2-thio, phenylthio, 4-nitrophenylthio, 2-aminophenylthio, 3-aminophenylthio, 4-aminophenylthio, benzylthio, phenylethylamino, 3-phenyl-propylamino, 2-methoxyphenylthio, 3-methoxyphenylthio, 4-methoxyphenylthio, benzimidazolyl-2-thio, 2-hydroxyethylthio, 2-aminoethylthio,-pyridinylthio, benzothiazolylthio, 2-methylphenylthio, 3-methylphenylthio, 4-methylphenylthio, 2-isopropylphenylthio, 4-isopropylphenylthio, 2,3,5,6-tetrafluorophenylthio, 4-hydroxyphenylthio, 2,4-dichlorophenylthio, methoxy, ethoxy, propioxy, butoxy, benzyloxy, 4-methylbenzyloxy, 4-methoxybenzyloxy, 4-fluorobenzyloxy, 4-chlorobenzyloxy, 4-bromobenzyloxy, phenyloxy, cyclohexylamino, benzylamino, 4-isopropoxyphenylthio, 4-methylthiophenylthio, 6-aminohexylamino, 2,3-

dichlorophenylthio, 2,5-dichlorophenylthio, 2,4-difluorophenylthio, 2,5-dimethoxyphenylthio, 2,5-dimethylthiophenylthio, 2,6-dimethylthiophenylthio or 2,6-dichlorophenylthio.

Claim 5 (Currently amended): The compound of claim 1, wherein

**R1** is azido, 2-chlorophenylthio, 3-chlorophenylthio, 4-chlorophenylthio, 2-bromophenylthio, 3-bromophenylthio, 4-bromophenylthio, 2-fluorophenylthio, 3-fluorophenylthio, 4-fluorophenylthio, 4-methylcumariny, naphthyl-2-thio, phenylthio, 4-nitrophenylthio, 2-aminophenylthio, 3-aminophenylthio, 4-aminophenylthio, benzylthio, phenylethylamino, 2-methoxyphenylthio, 3-methoxyphenylthio, 4-methoxyphenylthio, isopropylthio, benzimidazolyl-2-thio, 2-hydroxyethylthio, 2-aminoethylthio, pyridinylthio, benzothiazolylthio, 2-methylphenylthio, 3-methylphenylthio, 4-methylphenylthio, 2-isopropylphenylthio, 4-isopropylphenylthio, 2,3,5,6-tetrafluorophenylthio, 4-hydroxyphenylthio, 2,4-dichlorophenylthio, methoxy, benzyloxy, cyclohexylamino, benzylamino, ~~phenylseleno~~, 4-isopropoxyphenylthio, 4-methylthiophenylthio, 6-aminoethylamino, 2,3-dichlorophenylthio, 2,5-dichlorophenylthio, 2,4-difluorophenylthio, 2,5-dimethoxyphenylthio, 2,5-dimethylthiophenylthio, 2,6-dimethylthiophenylthio or 2,6-dichlorophenylthio.

Claim 6 (Previously presented): The compound of claim 1, wherein

**R1** is azido, 4-chlorophenylthio, methylamino, methylthio, 4-fluorophenylthio, 4-methylcumariny, naphthyl-2-thio, phenylthio, 4-nitrophenylthio, 2-aminophenylthio, benzylthio, n-hexylthio, phenylethylamino, 4-methoxyphenylthio, isopropylthio, benzimidazolyl-2-thio, 2-hydroxyethylthio, ethylthio, 2-aminoethylthio, pyridinylthio, benzothiazolylthio, 4-methylphenylthio, 3-methoxyphenylthio, 4-isopropylphenylthio, 2,3,5,6-tetrafluorophenylthio, 4-hydroxyphenylthio, 2,4-dichlorophenylthio, methoxy, benzyloxy, cyclohexylamino, benzylamino, 4-isopropoxyphenylthio, 4-methylthiophenylthio or 6-aminoethylamino.

Claim 7 (Previously presented): The compound of claim 1, wherein

**R1** is S-aryl.

Claim 8 (Previously presented): The compound of claim 1, wherein

**R1** is 4-chlorophenylthio, 4-fluorophenylthio, naphthyl-2-thio, phenylthio, 4-nitrophenylthio, 4-methoxyphenylthio, pyridinyl-2-thio, 4-methylphenylthio, 4-isopropylphenylthio, 2,3,5,6-tetrafluorophenylthio, 4-hydroxyphenylthio, or 2,4-dichlorophenylthio.

Claim 9 (Previously presented): The compound of claim 7, wherein  
**R1** is 4-chlorophenylthio, 4-fluorophenylthio, 4-methoxyphenylthio, 4-methylphenylthio or 4-hydroxyphenylthio.

Claim 10 (Previously presented): The compound of claim 1, wherein  
**R2** is Cl, Br, I, azido, O-alkyl or S-alkyl.

Claim 11 (Previously presented): The compound of claim 1, wherein  
**R2** is Cl, Br, I, O-alkyl, S-methyl or S-ethyl.

Claim 12 (Previously presented): The compound of claim 1, wherein  
**R2** is Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, O-isobutyl or S-methyl.

Claim 13 (Previously presented): The compound of claim 1, wherein  
**R2** is O-methyl, O-ethyl, O-propyl, O-butyl or O-isobutyl.

Claim 14 (Previously presented): The compound of claim 1, wherein  
**R2** is O-methyl.

Claim 15 (Previously presented): The compound of claim 1, wherein  
**R3** is amino, NH-alkyl, N-bisalkyl, NH-aryl, NH-alkyl-carbamoyl, N-bisalkyl-carbamoyl, amido-alkyl or amido-aryl.

Claim 16 (Previously presented): The compound of claim 1, wherein  
**R3** is amino, NH-phenyl, NH-tert-butyl, NH-tert-butylcarbamoyl, NH-phenylcarbamoyl, NH-acetyl, NH-propionyl, NH-butyryl, NH-benzoyl, NH-benzyl, NH-phenylethyl, NH-phenylpropyl, N-bismethyl or N-bisethyl.

Claim 17 (Previously presented): The compound of claim 1, wherein  
**R3** is amino, NH-phenyl, NH-tert-butyl, NH-tert-butylcarbamoyl, NH-phenylcarbamoyl; NH-butyryl, NH-benzoyl, NH-benzyl, N-bismethyl or N-bisethyl.

Claim 18 (Previously presented): The compound of claim 1, wherein

**R3** is amino, NH-phenyl, NH-tert-butyl, NH-tert-butylcarbamoyl, NH-benzoyl or N-bismethyl.

Claim 19 (Previously presented): The compound of claim 1, wherein **R3** is amino or NH-tert-butyl.

Claim 20 (Previously presented): The compound of claim 1, wherein **R4** and **R5** are independently O(H) or S(H).

Claim 21 (Previously presented): The compound of claim 1, wherein **R4** and **R5** are O(H).

Claim 22 (Currently amended): A compound selected from the group consisting of:

- ~~8-bromo-2'-deoxyadenosine-3',5'-cyclic monophosphate;~~
- 8-(4-chloro-phenylthio)-2'-deoxyadenosine-3',5'-cyclic monophosphate;
- 8-(4-chloro-phenylthio)- N<sup>6</sup>-phenyl-2'-deoxyadenosine-3',5'-cyclic monophosphate;
- 8-bromo-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-(4-chloro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- ~~8-methylamino-2'-O-methyladenosine-3',5'-cyclic monophosphate;~~
- ~~8-methylthio-2'-O-methyladenosine-3',5'-cyclic monophosphate;~~
- 8-(4-fluoro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-(4-methyl-cumarinyl-7-thio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-(naphthyl-2-thio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-phenylthio-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-(4-nitro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-(2-amino-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-benzylthio-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-n-hexylthio-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-phenylethylamino-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-(4-methoxy-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- ~~8-isopropylthio-2'-O-methyladenosine-3',5'-cyclic monophosphate;~~
- 8-(benzimidazolyl-2-thio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- 8-(2-hydroxy-ethylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;
- ~~8-ethylthio-2'-O-methyladenosine-3',5'-cyclic monophosphate;~~

8-(2-amino-ethylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-(pyridinyl-2-thio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-(benzothiazolyl-2-thio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-(4-methyl-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-(3-methoxy-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-(4-isopropyl-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-(2,3,5,6-tetrafluoro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-(4-hydroxy-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-(2,4-dichloro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-(4-chloro-phenylthio)-2'-(N,N-dimethyl)-carbamoyl-adenosine-3',5'-cyclic monophosphate;  
~~8-methoxy-2'-O-methyladenosine-3',5'-cyclic monophosphate;~~  
 8-benzyloxy-2'-O-methyladenosine-3',5'-cyclic monophosphate;  
 8-bromo-2'-O-methyladenosine-3',5'-cyclic monophosphorothioate, Sp-isomer;  
 8-bromo-2'-O-methyladenosine-3',5'-cyclic monophosphorothioate, Rp-isomer;  
 8-(4-chloro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphorothioate, Sp-isomer;  
 8-(4-chloro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphorothioate, Rp-isomer;  
 8-bromo-2'-deoxyadenosine-3',5'-cyclic monophosphorothioate, Rp-isomer;  
 8-bromo-2'-deoxyadenosine-3',5'-cyclic monophosphorothioate, Sp-isomer;  
 8-(4-chloro-phenylthio)-2'-deoxyadenosine-3',5'-cyclic monophosphorothioate, Rp-isomer;  
 8-(4-chloro-phenylthio)-2'-deoxyadenosine-3',5'-cyclic monophosphorothioate, Sp-isomer;  
 8-cyclohexylamino-2'-deoxyadenosine-3',5'-cyclic monophosphate;  
 8-chloro-2'-O-methyladenosine-3',5'-cyclic monophosphate; and  
 N<sup>6</sup>-tert-butyl-8-(4-chloro-phenylthio)-2'-deoxyadenosine-3',5'-cyclic monophosphate.

Claim 23-31 (Cancelled)

Claim 32 (Previously presented): A pharmaceutical composition comprising the compound of claim 1 or 22, and one or more pharmaceutically acceptable excipients.

Claim 33-66 (Cancelled):

Claim 67 (Currently amended): The compound of claim 22 wherein said compound is ~~comprising~~ 8-(4-chloro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 68 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(4-chloro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 69 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(naphthyl-2-thio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 70 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-phenylthio-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 71 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(4-nitro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 72 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-n-hexylthio-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 73 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(4-methoxy-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 74 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(benzothiazolyl-2-thio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 75 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(4-methyl-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 76 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(4-isopropyl-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 77 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(2,3,5,6-tetrafluoro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 78 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(4-hydroxy-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 79 (Currently amended): The compound of claim 22 wherein said compound is comprising 8-(2,4-dichloro-phenylthio)-2'-O-methyladenosine-3',5'-cyclic monophosphate.

Claim 80 (New): The compound of claim 1, wherein **R1** is 4-chlorophenylthio and **R2** is O-methyl.

Claim 81 (New): A pharmaceutical composition comprising the composition of claim 80 and one or more pharmaceutically acceptable excipients.